A Comparative Study of Islamic and Conventional Banks Risk Management Practices: Empirical Evidence from Pakistan

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A Comparative Study of Risk Management Practices between Islamic and Conventional Banks: : The Case of Pakistan

Abstract

This paper investigates risk management practices of Islamic and conventional banks currently operating in the city of Lahore, Pakistan. Self-administered questionnaire is used to collect data from 150 bank senior managers and risk specialists with equal representation of the two banking categories. The study results reveal that risk identification, risk assessment and analysis, credit risk analysis and risk governance are the most efficient and influential variables in explaining the risk management practices of Islamic banks. Whilst understanding risk management, credit risk analysis, and risk governance are the most significant and contributing variables in the risk management practices of conventional banks. The study findings also show that Islamic banks have more areas of weaknesses in their risk management practices than conventional banks. The results presented in this study are likely to benefit bank managers, investors, regulators, and policymakers in guiding them when developing, reformulating and overseeing the bank(s) existing risk management practices.

Key Words: Islamic banks, conventional banks, risk management, risk identification, risk assessment and analysis, credit risk analysis, risk governance.

1. Introduction

Academics, practitioners and regulators agree that effective risk management is pivotal to the success of modern banks, either conventional or Islamic (Al-Tamimi and Al-Mazrooei, 2007; Hussain and Al-Ajmi, 2012; Rosman, 2009; Khalid and Amjad, 2012; Shafique et al., 2013). This notion has sparked the argument invoking the development of a comprehensive approach in dealing with risk exposures in banks (Sensarma and Jayadev, 2009).

The call for effective risk management in banking has accelerated further after the recent financial crisis as many scholars believe that the failure of many financial institutions during this crisis was due to inadequate risk management practices (Hashagen et al., 2009; Holland, 2010; Sabato, 2010). This has motivated our study to shed more lights on the main weaknesses of the current banking risk management practices using Pakistan as our case study. The research also contributes into our understanding of how risk management techniques differ between conventional and Islamic banks.

While there are a number of studies devoted to conventional banking risk management practices (i.e. Cebenoyan and Strahan, 2004; Ratnovski, 2013; Seok Weon, 2015) Islamic banks are still under investigated in this very important area of research. This is despite the fast growth in Islamic banking asset size and number of providers. By the end of 2015 the total assets of Islamic banks is expected to reach US2.5 trillion Dollars with 375 Islamic financial institutions operating worldwide (World Islamic Banking, 2014). In Pakistan, which is the focus of this study, the asset base of Islamic banks is estimated at US9.6 billion Dollars in 2014 (State Bank of Pakistan, 2014). This is more than 10% of the nation overall banking assets. The growth in the market share of Islamic banks is also expected to continue in the foreseeable future and is expected to reach 20% by 2020.

In conjunction with the main aim of the study our research attempts to answer two pivotal questions: (1) what are the main weaknesses in the current risk management practices of Islamic and conventional banks operating in Pakistan?; and (2) how do risk management practices in Islamic banks differ from those of conventional banks?

The remainder of the article is organised as follows. Section two outlines the main developments in banking risk management practices as driven by the existing literature. The conceptual framework is then discussed in section three. The research methodology and data are explained in the subsequent section. In section five we present the study findings and we explicate the main results emerging from the research investigation. The final section concludes the paper and provides directions for future research.

2. Literature Review

Risk management is considered as a process that entails different fundamentals and steps. Bhattacharya (2010, p. 22) states that the process of risk management should cover at least seven key areas: (1) risk identification; (2) risk measurement; (3) risk analysis and evaluation; (4) risk monitoring; (5) risk control; (6) risk mitigation; and (7) risk avoidance. While IBBM (2010) report suggests a minimum of four steps to incorporate in the risk management process: risk identification, risk assessment and measurement, risk control and mitigation and risk monitoring. In the context of Islamic banking Sharia law and principles is added as another parameter into the risk management process of banks (Khan and Ahmed, 2001).

Considering the relevant literature on bank risk management practices we find Al-Tamimi and Al-Mazrooei (2007), Shafiq and Nasr (2010), Hassan (2009), Khalid and Amjad (2012), and Hussain and Al-Ajmi (2012) among the scholars who investigated this area of research using questionnaire as their main research tool. The results of Al-Tamimi and Al-Mazrooei (2007) revealed that UAE banks are efficient in identifying, assessing, analysing and monitoring risks but differences do exists

between local and foreign banks in their capacity to assess, analyse and monitor risks. Hassan (2009) finds that risk management practices of Islamic banks in Brunei Darussalam are strongly aligned across risk identification and risk analysis and assessment. The results presented by Hussain and Al-Ajmi (2012) indicate that banks operating in Bahrain are efficient in identifying, assessing, analysing and monitoring risks. However, differences do exist between Islamic and conventional banks in terms of their risk understanding and management as in Islamic banks managers are required to fully comply with Sharia rules.

Another relevant research paper is by Shafiq and Nasr (2010) in which primary and secondary data is used to investigate risk management practices of commercial banks in Pakistan. They found monitoring of risk is the most influential variable in risk management practices of Pakistani commercial banks. However, when regression analysis is applied separately on each variable used in their study understanding risk management, risk identification, risk assessment, credit risk analysis have significant and positive relationship with risk management practices alongside risk monitoring. The results obtained by Shafiq and Nasr also revealed differences between public sector commercial banks and private local banks in terms of understanding risk and risk monitoring. In a similar study by Khalid and Amjad (2012) they found that risk monitoring, understanding risk and tools of risk management, and credit risk analysis are the most influential variables in risk management practices of Islamic banks operating in Pakistan.

In an international study by Ahmad et al. (2013), which included Pakistan alongside UAE and Bahrain, their results revealed a number of differences in what is considered as the most important factors underpinning banking risk management practices in each of these three countries. In Bahrain they found that understanding of risk management tools, risk assessment and evaluation, identification of risk and credit risk analysis all have significant statistical relationship with banks' risk management practices. But, the risk monitoring has exhibited a positive and insignificant relationship with risk management practices of banks operating in Bahrain. The results obtained for UAE indicate that understanding risk management tools, risk identification, risk assessment and analysis all have a positive and significant relationship with banks' risk management practices. Nevertheless, understanding methods of risk management is found to be the most influential variable for the UAE banks. The results of Pakistani banks revealed that having good grasp of risk management techniques, risk assessment and analysis, identification of risk, risk monitoring and credit risk analysis have significant statistical relationship with bank risk management practices.

The liquidity crisis of 2007-2008 has further intensified research carried on banking risk management practices including those taken by professional bodies. KPMG (2009), for example, reports the results of a survey conducted by the Economist Intelligence Unit (EIU) in 2008 based on data collected from 500 senior managers who are directly involved in risk management of leading global banks. The results presented in this report indicate weaknesses in risk governance, lack of expertise at the executive board level, and weak communication and reporting between business units and functions of these banks.

Likewise, a number of policy documents issued by national and international financial authorities have outlined the need to set up a comprehensive risk management framework and to reconsider the current governance structure of banks (Financial Services Authority, 2008; Institute of International Finance, 2007; Basel Committee on Banking Supervision, 2008). The regulatory bodies also suggest keeping risk on highest level of the bank's agenda. Along the same line of argument Sabato (2010) recommends empowering the risk committee and chief risk office responsibility in the over sighting of bank risk exposures.

In this study we have incorporated risk governance and liquidity risk analysis as additional two variables in the bank risk management model with aim to provide empirical evidence on their relevance to the approach currently applied in banking risk management. We also provide in-depth

analysis and detailed comparison of the risk management practices and procedures of Islamic and conventional banks currently operating in Pakistan.

3. Conceptual Framework

Many studies published by well-known international bodies highlight the weak risk governance as the main cause of the recent financial crisis (IIF and Ernst and Young, 2012; KPMG, 2009). This argument is further supported by group of scholars (Hashagen et al., 2009; Holland, 2010; Sabato, 2010; Aebi et al., 2012; Battaglia and Gallo, 2015). The consensus among the scholars is that poor governance is leading to lack of confidence of stakeholders in bank's ability to manage its asset and liabilities which has triggered the liquidity crisis of 2007. The crisis then served as a means in creating systematic risk which lead to the spread of the crisis across borders (García-Marco and Robles-Fernandez, 2008). A study by Derwall and Verwijmeren (2007) has also provided empirical evidence supporting the view that good governance contributes directly to minor systematic risk.

Liquidity risk is considered as another significant factor that contributed to the financial crisis of 2007-2008. Jenkinson (2008), for example, stated that the crisis has highlighted clear weaknesses in the liquidity risk management of banks. This has undermined the financial stability of the banking industry and the economy as whole. Liquidity risk is also perceived as an important risk under Basel III principles (Giordana and Schumacher, 2013). The Basel III accord has introduced minimum leverage ratio and two liquidity standards for banks (liquidity cover and net stable funding ratios) to ensure that the liquidity risk of banks is properly managed.

To test if the above views are correct in relation to risk governance and liquidity risk this study extends the banking risk management practices model suggested by Al-Tamimi and Al-Mazrooei (2007) by incorporated these two very important risk factors in the research model. The model is then applied to both conventional and Islamic banks currently operating in Pakistan.

Besides of liquidity and governance risk other researchers (Al-Tamimi and Al-Mazrooei, 2007; Hassan, 2009; Rosman, 2009; Shafiq and Nasr, 2010; Khalid and Amjad, 2012; Hussain and Al-Ajmi, 2012; and Ahmad et al., 2013) have included understanding risk and risk management (URRM), risk identification (RI), risk assessment and analysis (RAA), risk monitoring and reporting (RMR), credit risk analysis (CRA) as the main determinants of bank risk management practice model. In this study we have incorporated all these factors (URRM, RI, RAA, RMR and CRA) and added liquidity risk analysis (LRA), risk governance (RG) and bank type (this is to distinguish between conventional and Islamic banks) into the final research model. The full function of risk management practices (RMP) which we ultimately tested empirically is as follows: RMP= f (URRM, RI, RAA, RMR, CRA, LRA, RG, Bank type).

4. Research Methodology

The study adopts a quantitative research approach employing self-administered questionnaire. Using questionnaire is considered as an appropriate research technique to obtain primary data (Tufano, 1996). It is also an economical way of collecting data from a potentially large number of respondents allowing for statistical analysis of the study results (Miller, 1983). This research methodology is also in-line with many studies conducted on risk management practices in emerging markets (Al-Tamimi and Al-Mazrooei, 2007; Hassan, 2009; Khalid and Amjad, 2012; Shafiq and Nasr, 2010; and Hussain and Al-Ajmi, 2012).

Data was collected from the selected banks' branch managers, senior credit managers, senior management (including bank vice president, financial controller, credit risk officer, group chief of commercial and retail banking, area credit risk manager, regional manager), and experts from the risk management department of the Islamic and conventional banks operating in the city of Lahore

(Pakistan). These individuals were selected to complete the questionnaire as they were considered to be the ones who have the relevant knowledge on banks' risk management practices.

The data was collected from 12 conventional banks, 5 fully fledged Islamic banks and 7 conventional banks with Islamic windows. The sample size included 150 respondents comprising 75 respondents from each type banking category, Islamic and conventional. Conventional banks with Islamic windows are included under the Islamic category as their sharia compliant products and services are offered and managed outside their normal conventional business lines and are subject to the same Islamic banking principles. Initially, 180 questionnaires were distributed to the banks' relevant employees, out of which 162 questionnaires were returned. In total, 12 questionnaires were eliminated because of missing data. The final response rate was 83.3%.

Previous literature on bank risk management practices (i.e. Al-Tamimi and Al-Mazrooei, 2007; Hassan, 2009) and this study research objectives were fully observed in the preparation of the questionnaire. The items and statements included in the questionnaire have also been carefully selected. The final version of questionnaire consisted of 7 sections: (1) Understanding Risk and Risk Management Practices (URRM); (2) Risk Identification (RI); (3) Risk Assessment and Analysis (RAA); (4) Risk Monitoring and Reporting (RMR); (5) Credit Risk Analysis (CRA); (6) Liquidity Risk Analysis (LRA); and (7) Risk Governance (RG).

Statistical measures including R-square and F-statistics were used to check the validity of the study data. The reliability of the data was verified by applying Cronbach's alpha to each variable. Cronbach's alpha helped to measure internal consistency of the results within a given scale. Data is considered reliable if coefficient value is equal or greater than 0.70 (Nunnally and Bernstein, 1994; De Vaus, 2002; Hair et al., 2010). Table 1 below presents the reliability analysis of data based on type of bank i.e. Islamic and conventional bank. As exhibited in the table the overall data is reliable as Cronbach's alpha value is greater than 0.70.

Table 1: Study Data Reliability

	No. of items	Cronbach's alpha	No. of Variables	Cronbach's alpha
Overall bank	86	.941	8	.894
Islamic Banking data	86	.946	8	.931
Conventional Banking data	86	.936	8	.854

The statements used in the questionnaire were based on the 7-Likert scale and were coded as follows: Strongly Disagree = 1; Disagree = 2; Somewhat Disagree = 3; Undecided = 4; Somewhat Agree = 5; Agree = 6; and Strongly Agree = 7.

The study data was analysed in two folds. First, the descriptive statistics are computed to estimate the differences in the characteristics of the two types of banks, Islamic and conventional banks, in terms of carrying out their risk management practices and process. Second, inferential statistics, including correlation matrix, regression analysis and Mann-Whitney U test were used in examining the strength and direction of relationship of the independent and dependent variables built-in the study regression model. The Mann-Whitney U test was also applied to determine whether differences exist between conventional and Islamic banks in terms of their risk management practices and if these differences are significant or not. The inferential statistics enable researchers to make deductions and to draw conclusions from the study results (McQueen and Knussen, 2002). In addition, Spearman Rho correlation is adopted to provide further check on the direction and strength of the relationship among the study variables. Pearson correlation was not used though because of the violation of assumption of parametric test.

5. Data Analysis and Discussion

This section provides an in-depth analysis to the study data. This is organised by bank managers' responses to the key statements covering risk management practices of conventional and Islamic banks. First, as exhibited in Table 2 below the mean response to the nine statements about understanding risk and risk management for Islamic and conventional banks is 5.8356 and 5.8504 respectively. The overall average does not, however, show any significant differences in the responses of Islamic and conventional banks. The highest mean is given to statement 5 (risk management is important for the success and performance of the bank) in which Islamic banks had a score of 6.2933 with a standard deviation of 0.5396 and conventional banks had a result of 6.3200 with a standard deviation of 0.5963. The lowest mean is given to statement 7 (the objective of your bank is to expand the applications of the advanced risk management technique). The average score for Islamic banks and conventional banks for this statement is 5.0267 and 5.4533 respectively. This result supports the notion that conventional banks are more likely to expand their existing risk management techniques than Islamic banks.

Table 2: Responses on Understanding Risk and Risk Management Practices

	Statements	**Islamic banks**		**Conventional banks**	
		Mean	**Standard deviation**	**Mean**	**Standard deviation**
1	There is a common understanding of risk management across the bank.	5.7067	0.6733	5.6533	0.7621
2	Risk management responsibility is clearly set out and understood throughout the bank.	5.7067	0.7492	5.8667	0.7593
3	Risk management policy is communicated down the line and well understood by all bank concerned parties.	5.7600	0.6943	5.7467	0.8557
4	Accountability for risk management is clearly set out and understood throughout the bank.	5.8667	0.8274	5.8400	1.0531
5	Risk Management is important for the success and performance of the bank.	6.2933	.53960	6.3200	0.5963
6	Application of the most sophisticated techniques in risk management is pivotal in the bank.	5.7467	.63869	5.6533	0.9514
7	The objective of your bank is to expand the applications of the use of advanced risk management technique.	5.0267	1.5419	5.4533	1.1185
8	It is significant for your bank to emphasize on continuous review and evaluation of the techniques used in risk management.	6.2800	0.7270	6.1467	0.7831
9	The bank applies risk management techniques with the aim to reduce its costs or expected losses.	6.1333	0.7039	5.9733	1.0523
	Average	**5.8356**		**5.8504**	

The responses to statement 2 indicate that risk management line of responsibility is better understood by conventional banks' staff than those of Islamic banks. This can be explained by having more complicated risk models in Islamic banks as they need to deal with different types of risks that are inherited in their financial products. Whereas, responses to statement 9 reveal that Islamic banks are better in applying their risk management techniques to reduce costs and expected losses. This is mainly attributed to the size of Islamic banks' portfolio which is smaller compared to conventional banks. The results obtained for statement 8 are complementary to those related to statement 9 as they indicate that Islamic banks place more emphasis on continuous review and evaluation of their risk management techniques which ultimately help them cut their losses.

Table 3: Responses to Statements on Risk Identification

	Statements	Islamic banks		Conventional banks	
		Mean	Standard deviation	Mean	Standard deviation
1	The bank conducts a comprehensive and systematic identification of its risks in line with the bank overall aims and objectives.	6.0400	0.7959	6.3333	0.6224
2	Risk identification is a continuous process in the bank at transactional and portfolio levels.	6.1867	0.8002	6.3067	0.6570
3	The bank finds it difficult to identify, and prioritize its main risks.	3.4667	1.5538	3.5733	1.9602
4	Changes in risk are recognized and identified with the bank's rules and responsibilities.	5.4667	0.9054	5.8000	1.0654
5	Your bank is aware of the strengths and weaknesses of the risk management systems of the other banks.	4.3067	1.4884	4.8933	1.5384
6	Your bank has developed and applied procedures for the systematic identification of investment opportunities.	6.0267	0.7706	6.0133	0.8620
	Average	**5.2489**		**5.4867**	

Table 3 exhibits the mean and standard deviation of Islamic and conventional banks responses to the six statements on risk identification. The overall mean value of conventional banks (5.4867) attained in this area is higher than the one attained for Islamic banks (5.2489). The highest mean in the case of Islamic banks is given to statement 2 with score of 6.1867 while conventional banks had their highest mean under statement 1 with score of 6.3333. The lowest response is given to statement 3 in which Islamic banks had a mean value of 3.4667 compared to 3.5733 in conventional banks. The low score attained by Islamic banks in this area is due to being exposed to sharia compliance related risks which are hard to identify or measure.

Table 4: Responses to Statements on Risk Assessment and Analysis

	Statements	Islamic banks		Conventional banks	
		Mean	Standard deviation	Mean	Standard deviation
1	Your bank assesses the likelihood of risk occurrence.	6.0800	0.5872	5.7200	1.1337
2	Your bank assesses risks by using qualitative analysis methods (e.g. High, moderate, and low).	5.3600	1.2262	5.2400	1.4781
3	Your bank assesses risk by using quantitative analysis method.	6.2533	0.9167	6.0133	1.2246
4	Your bank analyses and evaluates the opportunities that it has to achieve objectives.	5.9867	0.7442	6.1200	0.6358
5	Your bank's response to analysing risk includes an assessment of the costs and benefits of each relevant risk.	5.8800	0.6567	5.8400	0.7359
6	Your bank's response to analysing risk includes prioritizing of risk and selecting those that need an application of active management.	6.0400	0.6665	6.0400	0.6459
7	Your bank's response to analysing risk includes prioritizing risk treatments where there are resource constraints on risk treatment implementation.	5.8000	0.6367	5.8800	0.6142
	Average	**5.9143**		**5.8362**	

Table 4 shows the mean and standard deviation of responses to statements on risk assessment and analysis. The overall mean value of the responses to the seven statements is higher in Islamic banks (5.9143) compared to conventional banks (5.8362). Results of statements 1, 2, 3 and 5 show higher

mean value for Islamic bank compared to conventional banks. Whereas, the results of statements 4 and 7 exhibit higher mean value for conventional banks as compared to Islamic banks. These results can be explained by the variation in the two banking models priorities over their risk analysis. In their strategic direction conventional banks have more emphasis on wealth creation while Islamic banks focus more at ensuring that they do not engage in highly risky activities as they are deemed unacceptable according to sharia law.

Table 6: Responses to Statements on Risk Monitoring and Reporting

	Statements	Islamic banks		Conventional banks	
		Mean	**Standard deviation**	**Mean**	**Standard deviation**
1	Monitoring the effectiveness of risk management is an integral part of routine management reporting in the bank.	6.1067	0.5345	5.8800	0.6358
2	Level of control by the bank is appropriate for the risks that it faces.	5.8133	0.8806	5.9467	0.6127
3	Reporting and communication processes within the bank support the effective management of risks.	5.9467	0.6757	5.9467	0.6344
4	The bank continuously evaluates the effectiveness of its existing controls and risk management responses.	5.8400	0.7173	5.8533	0.6301
5	The bank response to risk includes action plans in implementing decisions about identified risk.	5.8400	0.6786	5.9733	0.5688
6	Bank managers continuously monitor the implementation of risk management policies and make necessary adjustments.	5.9600	0.7959	6.1067	0.6056
7	The bank managers regularly monitor the effectiveness of the risk management policies and procedures.	5.9600	0.6865	6.0400	0.6459
8	The bank organisational structure enables monitoring and control over the business risks taken.	6.1067	0.7635	6.0933	0.6189
9	The Chief Risk Officer takes the full responsibility over risk monitoring in the bank.	5.9600	0.9363	5.8267	1.0574
	Average	**5.9482**		**5.9630**	

Table 6 shows the mean responses to bank risk monitoring and reporting nine statements. The results reveal minimal differences between the two banking categories in this area with mean value of 5.9482 for Islamic banks and 5.9630 for conventional banks. The highest mean value (6.1067) in Islamic banks is attained for statements 1 and 8. Whereas, conventional highest mean value (6.1067) is given to statement 6. The lowest mean value is given to statement 2 for Islamic banks (5.8133) whilst conventional banks' lowest mean (5.8267) is given to statement 9. These results indicate that more emphasise needs to be placed on risk control in the case of Islamic banks while increasing the level of accountability for the Chief Risk Officer should be a priority in the case of conventional banks.

Table 7 below shows the mean responses of the 10 statements on credit risk analysis. The results indicate that the overall mean value of conventional banks (6.3520) is slightly higher than that of Islamic banks (6.2987). The highest mean value for Islamic banks (6.5067) is attained under statement 2 which indicates that they place high emphasise on evaluating client's character, financial condition and ability to back the loan with good quality assets. On the other hand, the highest mean value for conventional bank (6.5067) is given to statement 4 pointing to the importance of risk management policy in dictating the bank overall credit policy. The results

obtained for statements 2, 5 and 9 implies that the two banking groups are cautious of their borrowers' creditworthiness at both the ex-ante and ex-post stages of the lending process. Such approach is considered to enable banks to develop better credit risk profile for their clients, to identify problem loans and speed their recovery.

Table 7: Responses to Statements on Credit Risk Analysis

	Statements	Islamic banks		Conventional banks	
		Mean	**Standard deviation**	**Mean**	**Standard deviation**
1	The bank undertakes credit worthiness analysis before granting loans.	6.2667	0.5773	6.3067	0.6570
2	The bank conducts thorough analysis of the client's characters, capacity, collateral, capital and conditions before granting loans.	6.5067	0.5294	6.4667	0.6224
3	The bank classifies borrowers according to their riskiness.	5.9733	0.6969	6.4400	0.5982
4	The bank credit policy commensurate with its overall risk management policy.	6.2000	0.5927	6.5067	0.6232
5	The bank obtains information about the borrowers from credit information bureau.	6.2800	0.6053	5.9600	0.7059
6	The bank sets credit limits by type of borrowers, economic sectors, and geographical locations to avoid concentration of credit.	6.3867	0.5669	6.4000	0.8542
7	Credit risk is monitored on a regular basis and reported to bank senior management.	6.4800	0.5291	6.3200	0.6401
8	The bank has a credit risk management committee to oversee its different credit risk exposures.	6.2800	1.4571	6.4400	0.6826
9	The credit administration of the bank ensures proper approval, completeness of documents, receipt of collateral and approval of exceptions before credit disbursement.	6.3200	0.5732	6.4400	0.5751
10	The bank board periodically reviews the credit risk strategy and credit policy.	6.2933	0.6529	6.2400	0.5890
	Average	**6.2987**		**6.3520**	

Table 8 exhibits the mean responses to 11 statements on liquidity risk analysis. The results indicate that the overall mean value of Islamic banks (6.0424) is higher than conventional banks (5.9455). This finding supports the view that Islamic banks are more cautious about liquidity risk than their conventional counterparts. Previous research by Islam and Chowdhury (2007), Ika and Abdullah (2011), Jaffar and Manarvi (2011) and Usman and Khan (2012) presented similar findings. The lack of investment opportunities for Islamic banks prevents them from using their liquidity sensibly as well as from diversifying their portfolio.

In both banking groups the highest mean value is given to statement 8. This result indicates that the asset and liability management committee is at the forefront in determining the bank policies on liquidity risk and in ensuring that the bank evaluation in this area is properly executed. Whereas, the lowest mean value is given to statement 11 as bank managers seem to give less attention to the use of Value at Risk (VaR) as a method to measure market risk. This finding is quite surprising taking into account the importance of market risk as one of the main risk pillars of Basel III Accord and banks are supposed to implement sophisticated techniques in dealing with this type of risk.

Table 8: Responses to Statements on Liquidity Risk Analysis

	Statements	Islamic banks		Conventional banks	
		Mean	Standard deviation	Mean	Standard deviation
1	Liquidity is a key determinant of the bank financial soundness.	5.9200	0.6098	6.1333	0.7039
2	The bank "Management Board" defines liquidity risk strategy, and its tolerance for liquidity risk based on the recommendation made by the Treasury and Risk Committee.	6.1467	0.6716	5.9067	1.0023
3	Bank managers give due consideration to external and internal factors posing liquidity risk while formulating the liquidity policy.	6.1200	0.6770	6.3200	0.7005
4	The current bank's policy clearly defines the bank liquidity strategy (short and long term).	6.2667	0.6844	6.1867	0.6301
5	The bank liquidity policy is flexible enough to deal with the unusual liquidity pressures.	5.6533	0.9078	5.6533	0.8300
6	Board of Directors and Senior Managers regularly review the liquidity policy of the bank.	6.0667	0.7039	6.2000	0.6778
7	Asset Liability Management Committee comprises of senior managers from each key area of the bank operations.	6.2267	0.6692	6.2800	0.6273
8	Asset Liability Management Committee is responsible for reviewing and recommending liquidity risk policies in the bank.	6.2933	0.6930	6.4400	0.5982
9	The bank has always identified the tools to meet its liquidity requirements.	6.1467	0.5857	6.2400	0.6543
10	Stress Testing and Scenario Analysis plays a central role in the liquidity risk management framework of the bank.	6.0400	0.9647	5.2267	1.4101
11	The bank Stress Testing is based on sophisticated risk management techniques including Value at Risk (VaR) and option based models.	5.5867	1.0792	4.8133	1.5218
	Average	**6.0424**		**5.9455**	

Table 9 shows the mean responses based on 18 statements all geared towards bank risk governance. The results indicate that the mean value attained by conventional banks in this area (5.8744) is slightly higher than the one achieved by Islamic banks (5.6983). This is attributed to the effectiveness of conventional banks' board of directors and risk committees in exercising their role in managing and monitoring bank risks (see statements 1-3) as well as having better information disclosure that aid directors in their day to day decision making (see statement 18a). The only area in which Islamic banks had score far higher than conventional banks is in internal auditors' independence and their accountability to the board of directors. The small size of Islamic banks is the likely reason why it is easier for the board of directors to monitor the duties carried out by the bank internal auditors.

The results attained for statements 8 and 9 indicate that the Chief Risk Officer is having a weak role in overseeing banking risks and reporting to the risk committee in both conventional and Islamic banks. This finding is in line with Sabato (2010) concluding remarks that one of the contributing factors to the recent financial crisis is the limited role played by Chief Risk Officers in properly administering banking risks.

Islamic banks' respondents gave low score to statement 2 which point to less knowledge by board of directors of the banking industry and its risks. This is an alarming result particularly as found by Hashagen et al. (2009) and Ard and Berg (2010) the lack of relevant banking knowledge is one of

the main contributing factors to the recent credit crisis. Another area in which Islamic banks seem to be struggling is on the remuneration disclosure of their board and senior managers (see statement 18b). The lack of disclosure is likely to result in less confidence of other key stakeholders in the operations and performance of Islamic banks, particularly for those who are placing their funds under *mudaraba* and *murabaha* contracts and face the risk of deduction in their return because of remuneration paid to the bank directors.

Table 9: Responses to Statements on Risk Governance

	Statements	Islamic banks		Conventional banks	
		Mean	**Standard deviation**	**Mean**	**Standard deviation**
1	The board of directors approves and oversees the bank risk management framework, policies and processes.	5.8267	1.0183	6.0800	0.6928
2	The bank board of directors has relevant knowledge of the banking industry and risk management.	5.2000	1.2080	5.6800	0.9885
3	The board of director formulates and defines the mandate and responsibilities of board-level committees (Risk committee; Audit committee) which deal with risk governance.	5.8000	0.5694	6.0933	0.7008
4	Risk management committee members of the bank are independent and qualified.	6.2933	0.8182	6.2533	0.6386
5	The bank risk management committee provides sufficient policies and guidelines on how to manage different risks.	6.1467	0.6716	6.2133	0.6836
6	The risk committee reviews and recommends risk strategy to board of directors and oversees the implementation of risk management framework.	6.0533	0.6954	6.1467	0.5376
7	The Chief Executive Officer develops and recommends the overall business strategy, risk strategy, risk appetite statement and risk tolerance.	5.5867	1.2954	5.7333	0.7228
8	The Chief Risk Officer oversees the risk management functions of the bank.	4.3867	1.8808	4.9333	1.7578
9	The Chief Risk Officer develops, monitors and reports on the bank risk metrics.	4.0400	1.9413	4.8933	1.7977
10	The internal auditors ensure that risk management processes are in compliance with the bank policies.	5.8933	0.6487	5.9200	0.6928
11	The internal auditors evaluate the effectiveness and efficiency of the bank risk management processes.	5.9467	0.7514	5.8933	0.7635
12	The internal auditors are independent and directly accountable to the board of directors.	6.4000	0.9004	6.2667	0.5773
13	The central bank has an effective role in the supervision of the bank risk management process.	5.7867	0.9766	5.9733	0.7347
14	The bank board and senior managers review internal audit reports, prudential reports, and external experts report as a part of the bank risk governance framework.	6.0400	0.7248	6.2133	0.6429
15	The bank compensation policies and practices are consistent with its corporate culture, long-term objectives, strategy and control environment.	5.8267	0.7046	5.8267	0.9497
16	The bank avoids compensation policies that create incentives for excessive risk taking.	5.4667	1.1310	5.6000	1.0266
17	The bank is governed in a transparent manner.	5.9867	0.6876	5.9200	1.0102
18	The bank discloses information on:				
	a) Financial and operating results	6.0933	1.1528	6.4267	0.5966
	b) Remuneration of board of directors and senior managers	5.4933	1.2010	5.5467	1.4265
	Average	**5.6983**		**5.8744**	

Table 10 shows the results of regression analysis of the study model when applied to Islamic banks. The model is estimated in order to investigate the effect of all independent variables (URRM, RI, RAA, RMR, CRA, LRA, and RG) on RMP of Islamic banks. As indicated by the value obtained for R-square, 75.9% of the variation in the dependent variable is due to the explanatory variables and the remaining 24.1% variation is due to other factors. F value is also significant at 1% and hence we can say that the overall model is a good fit.

The beta values indicate that RAA, CRA and RG are the main independent variables contributing to RMP. The results also reveal that RI, RAA, CRA and RG have a positive relationship with RMP. In addition, the t-value results show that RAA, CRA, RI are statistically significant at 1% while RG is statistically significant at 10%.

Table 10: Regression Results of Islamic banks

	Constant	**URRM**	**RI**	**RAA**	**RMR**	**CRA**	**LRA**	**RG**	
B	-1.017	-.274	.182	.615	-.047	.510	-.078	.231	$\mathbf{R^2}$ =.759
St. Error	.858	.201	.093	.155	.170	.110	.195	.136	F=30.151
t-value	-1.185	-1.363	1.948	3.978	-.276	4.635	-.401	1.689	Sig=.000
Sig.	.240	.177	.056***	.000*	.784	.000*	.690	.096***	
* Significant at 1%; ** Significant at 5%; *** Significant at 10%.									

Table 11 exhibits the regression results of the study model for the conventional banks category. The value of R^2 indicates that 65.2% variation in RMP is due to URRM, RI, RAA, RMR, CRA, LRA and RG and the remaining 34.8% variation is due to other factors. The F-statistics is significant at 1% and therefore the model under study is considered to be a good fit. The beta values show that URRM, RI, RMR, CRA, LRA and RG all have a positive relationship with RMP. RAA is the only indicator with negative relationship with RMP. This is unlike what is observed in Islamic banks in which URRM, RMR and LRA have negative correlation with RMP. These findings point to better risk management practices in conventional banks vis-à-vis Islamic banks. Conventional banks weak area is in risk assessment and analysis. This can be explained by the size of conventional banks portfolio which is larger than Islamic banks and therefore makes the evaluation of their risk portfolio more complicated.

Table 11: Regression Results of Conventional Banks

	Constant	**URRM**	**RI**	**RAA**	**RMR**	**CRA**	**LRA**	**RG**	
B	.486	.260	.076	-.081	.123	.176	.121	.252	$\mathbf{R^2}$ =.652
St. Error	.563	.104	.074	.077	.174	.103	.098	.114	F= 17.902
t-value	.862	2.506	1.030	-1.060	.705	1.714	1.236	2.203	Sig.= .000
Sig	.392	.015*	.307	.293	.483	.091**	.221	.031*	
* Significant at 5%; ** Significant at 10%.									

6. Conclusions

In this study we have empirically investigated the risk management practices of Islamic and conventional banks that are currently operating in Pakistan. The study results show that risk identification, risk assessment and analysis, credit risk analysis and risk governance are the most efficient and influential variables in explaining the risk management practices of Islamic banks. On the other hand, understanding risk management, credit risk analysis, and risk governance are the most significant and contributing variables in the risk management practices of conventional banks. Differences between Islamic and conventional banks are also apparent in their liquidity risk analysis and risk governance.

Islamic banks are found to be weak in their liquidity risk analysis, risk monitoring and reporting and their directors overall understanding of the risk management practices. Whereas, risk assessment and analysis is the most inadequate area in conventional banks. Training bank staff to be more proficient in these areas would enable them to manage their risks more effectively. The role of the chief risk officer also needs to be strengthened as found in this research. The level of monitoring and information disclosure should be reinforced in the case of Islamic banks for better risk governance. Finally, we recommend that bank senior managers to further investigate why these aspects of the risk management process are not positively associated with the risk management practices as there maybe unique factors to the bank risk management, which are inadequate.

The current research has two main limitations. First, the data was collected from one Pakistani city, Lahore, and therefore the sample used may not be fully representative of the Pakistan banks. Second, the time frame of the data collection and status of the national economy during this time may have implications on the bank managers' perceptions of the significance of each area of the risk management process. For future research we propose applying the research model used in this study to other countries where Islamic banks are also prominent such as Malaysia and Saudi Arabia to draw any comparison with the results presented in this article. The statements used as parameters of risk management practices can also be extended to other areas and taxonomies such as those related to wealth maximisation and bank regulatory framework.

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